California Department of Forestry and Fire Protection
San Benito – Monterey Unit

Fire Management Plan
2004

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Unit Chief

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Battalion Chief
Fire Prevention Bureau

Contents

Introduction:

The California Fire Plan is the state's road map for reducing the risk of wildfire. By placing the emphasis on what needs to be done long before a fire starts, the Fire Plan seeks to reduce fire fighting costs and property losses, increase firefighter safety, and to contribute to ecosystem health. The San Benito – Monterey Unit, with the cooperation of key stakeholders, has designed a plan with the intention of meeting the goals set by both the stakeholders and the California Fire Plan.

CDF addresses fire prevention through its engineering, education and law enforcement programs. Their shared objective is reduced fire hazard and risk. This is more narrowly addressed in a planning process based on ignition management and loss reduction, including biomass harvesting, fire resistant landscaping, mechanical and chemical fuels treatments, building construction standards, infrastructure, land use planning, and pre-fire, safety zone, and escape plans.

Ignitions are managed by preventing fires likely to exceed the capabilities of available suppression forces that could result in large damaging fires. Loss reduction is integral to mitigating large and damaging fires. Significant improvement can be achieved by reducing hazards (fuel buildups around structures and communities) and working with private industry to implement hazard reduction plans around residential developments in the rural-urban intermix areas. Additionally, pre-designated suppression and evacuation plans are effective tools in ensuring civilian and firefighter life safety. Successful programs permit more effective utilization of CDF's initial attack forces and enhance firefighter safety and citizen safety.

Executive Summary:

The San Benito-Monterey Unit is located along the central coast between San Luis Obispo County on the south and Santa Cruz and Santa Clara counties on the north. The Pacific Ocean abuts the western side of the Unit, and the Diablo Mountains and the San Joaquin Valley lie to the east.

The Unit encompasses 2.1 million acres of State Responsibility Area (SRA), representing one of the largest state responsibility jurisdictions in CDF. There are approximately 700,000 acres of Federal, State and Local government land, some of which are protected by CDF contractually or by agreement with a Federal agency.

The Unit is operationally divided into four divisions and thirteen battalions or programs. The Unit has eleven state-funded fire stations, six local government stations, thirteen volunteer companies, one air attack base, one Helitack base, and a CDF/CDC inmate conservation camp. Additionally, the unit has Cooperative Fire Protection Agreements with seven local fire protection agencies.

The weather in the unit is divided into two basic patterns. The northwestern area of the unit experiences a common coastal weather pattern with low clouds and fog which by mid-day give way to temperatures in the mid 70's to 80's. The eastern and southern areas of the unit generally have less fog and temperatures commonly in the 90 to 100 degree range. Winters are mild with rainfall from 7 to 30+ inches. Wind speed and direction is variable, but is predominantly northwest at 7-10 MPH.

The topography of the unit is steep and rugged with moderate to heavy vegetative cover. Plant species vary by aspect, slope, elevation, soil type, past fire history, and distance from the coast. The predominant vegetation types are coastal sage, chaparral, and oak/grass woodland, with the Monterey Peninsula supporting stands of various coastal timbers.

The coastal weather influence, together with periods of extreme fire weather conditions, provide a window for extreme wildland fire behavior in areas of potentially high dollar loss. These conditions combine with the expanding wildland interface and urban population to yield the potential for frequent large, damaging and costly wildfires. These areas at risk are defined further in the target area section of the Fire Management Plan. The unit has an overall fire hazard rating of Very High (85% of Unit).

Primary businesses include farming, industry, and tourism. San Benito and Monterey Counties continue to be listed among the top five fastest growing regions of the state.

The primary goal of the 2004 San Benito - Monterey Unit Fire Plan is to prevent the ignition and spread of unwanted, human-caused fires with an emphasis on reducing losses as a result of large damaging fires. Utilizing fire history, fuels data, weather data, and assets at risk, the unit has identified several target areas as indicated in this document. Proactive pre-fire suppression activities and public information and education programs are key elements of this plan.

Sam L. Mazza
Unit Chief

Stakeholders and Assets At Risk (AAR)

Stakeholders:

* **Who are they?**

The San Benito- Monterey Unit (BEU) hosts a diverse group of Stakeholders. Local government entities, citizens, and businesses have expressed concerns about the potential for large, damaging wildfires, and actions that can be taken to prevent or minimize the loss from such fires. With assistance from the Unit, local stakeholders have formed Fire Safe Councils in both Monterey and San Benito counties. As the Monterey County and San Benito County Fire Safe Councils continue to expand, their members, including homeowner groups, local fire agencies, PG&E, Fort Ord, The U.S. Forest Service, and The U.S. Bureau of Land Management, provide diverse opportunities to address the overall wildland fire problem from a community perspective. A detailed roster of local stakeholders is included in the appendix to this document.

* **What are the key issues important to stakeholders?**

Local stakeholders have concerns similar to those expressed historically by most residents of the state. Following the 2003 firestorm in Southern California, local stakeholders are fearful that a similar tragedy could occur in their communities. Recent mitigation efforts have raised the awareness of the impacts of large fires, including the unhealthful effects of exposure to smoke, loss of tourism, loss of homes and businesses, and the potential for serious injury or loss of life. Local stakeholders understand the fiscal constraints of today's economy, and are actively seeking avenues to mitigate the threat of large damaging fires through participation on Fire Safe Councils. The Unit and the Fire Safe Councils have taken advantage of, and continue to seek out available grants and other funding sources for hazard mitigation projects.

* **Assets at Risk**

Assets susceptible to fire damage are identified in the Fire Plan as air quality, rangelands, recreation, structures, timber, water and watersheds, wildlife and habitat, and other resources (cultural, historical, and scenic). The focus of this plan and relative importance of each Asset has been determined by reviewing input from local stakeholders and CDF Fire Managers. The BEU FIRE PLAN has been engineered with these issues in mind.

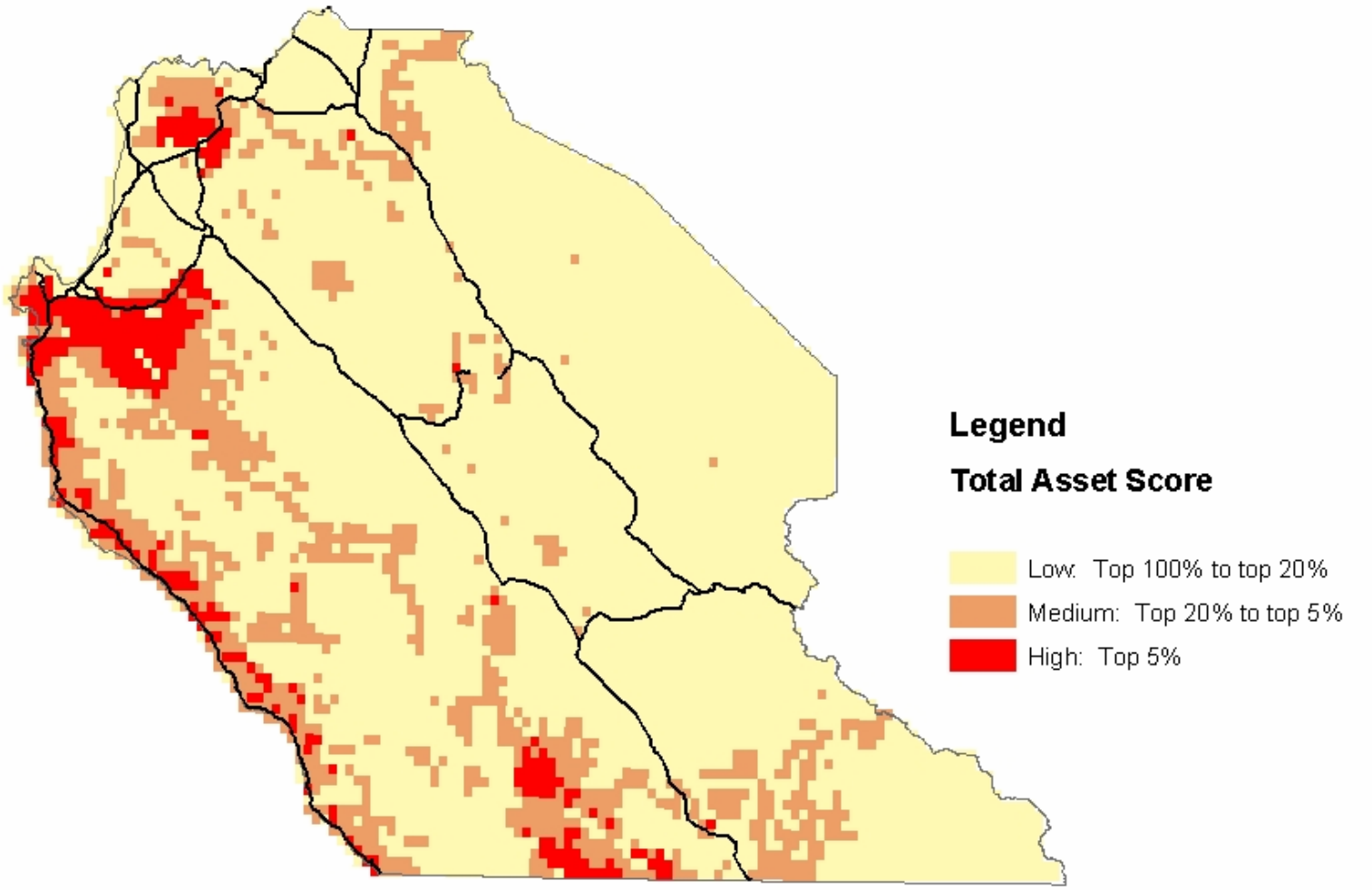
Assets At Risk (AAR)
Ranking Methodology

Asset at Risk	Public Issue Category	Location and ranking methodology
Hydroelectric power	Public welfare	1) Watersheds that feed run of the river power plants, ranked based on plant capacity; 2) cells adjacent to reservoir based plants (Low rank); and 3) cells containing canals and flumes (High rank)
Fire-flood watersheds	**Public safety Public welfare**	**Watersheds with a history of problems or proper conditions for future problems (South Coastal Plain, field/stakeholder input), ranked based on affected downstream population**
Soil erosion	Environment	Watersheds ranked based on erosion potential
Water storage	Public welfare	Watershed area up to 20 miles upstream from water storage facility, ranked based on water value and dead storage capacity of facility
Water supply	Public health	1) Watershed area up to 20 miles upstream from water supply facility (High rank); 2) grid cells containing domestic water diversions, ranked based on number of connections; and 3) cells containing ditches that contribute to the water supply system (High rank)
Scenic	Public welfare	Four mile view shed around Scenic Highways and 1/4 mile view shed around Wild and Scenic Rivers, ranked based on potential impacts to vegetation types (tree versus non-tree types)
Timber	Public welfare	Timberlands ranked based on value/susceptibility to damage
Range	Public welfare	Rangelands ranked based on potential replacement feed cost by region/owner/vegetation type
Air quality	Public health Environment Public welfare	Potential damages to health, materials, vegetation, and visibility; ranking based on vegetation type and air basin
Historic buildings	Public welfare	Historic buildings ranked based on fire susceptibility
Recreation	**Public welfare**	**Unique recreation areas or areas with potential damage to facilities, ranked based on fire susceptibility**
Structures	**Public safety Public welfare**	**Ranking based on housing density and fire susceptibility**
Non-game wildlife	Environment Public welfare	Critical habitats and species locations based on input from California Department of Fish and Game and other stakeholders
Game wildlife	Public welfare Environment	Critical habitats and species locations based on input from California Department of Fish and Game and other stakeholders
Infrastructure	**Public safety Public welfare**	**Infrastructure for delivery of emergency and other critical services (e.g. repeater sites, transmission lines)**
Ecosystem Health	Environment	Ranking based vegetation type/fuel characteristics

AAR categories highlighted in red represent target areas identified by stakeholders.

San Benito - Monterey Unit

Assets at Risk



Current Fire Situation

- **Level Of Service (LOS)**
- **Fuels**
- **Severe Fire Weather**

Current Fire Situation:

- **Ignition Workload Assessment (Level of Service)**

  The legislature has charged the State Board of Forestry and CDF with delivering a fire protection system that provides an equal level of protection to lands of similar type (PRC 4130). To do this, the department utilizes an analysis process that will define a level of service rating that can be applied to the wildland areas in California to compare the level of fire protection being provided. The rating is expressed as the percentage of fires that are successfully suppressed. Success is defined as those fires that are controlled before unacceptable damage and cost are incurred.

  Level of service focuses on identifying areas throughout the Unit with the potential of experiencing unacceptable loss and high suppression cost fires. In the assessment, Unit staff has analyzed data by damage, intensity, vegetation type, and initial attack success or failure from 1991 through 2001.

  Total SRA fires (reporting period): 2447
  Successful Initial Attacks: 2286

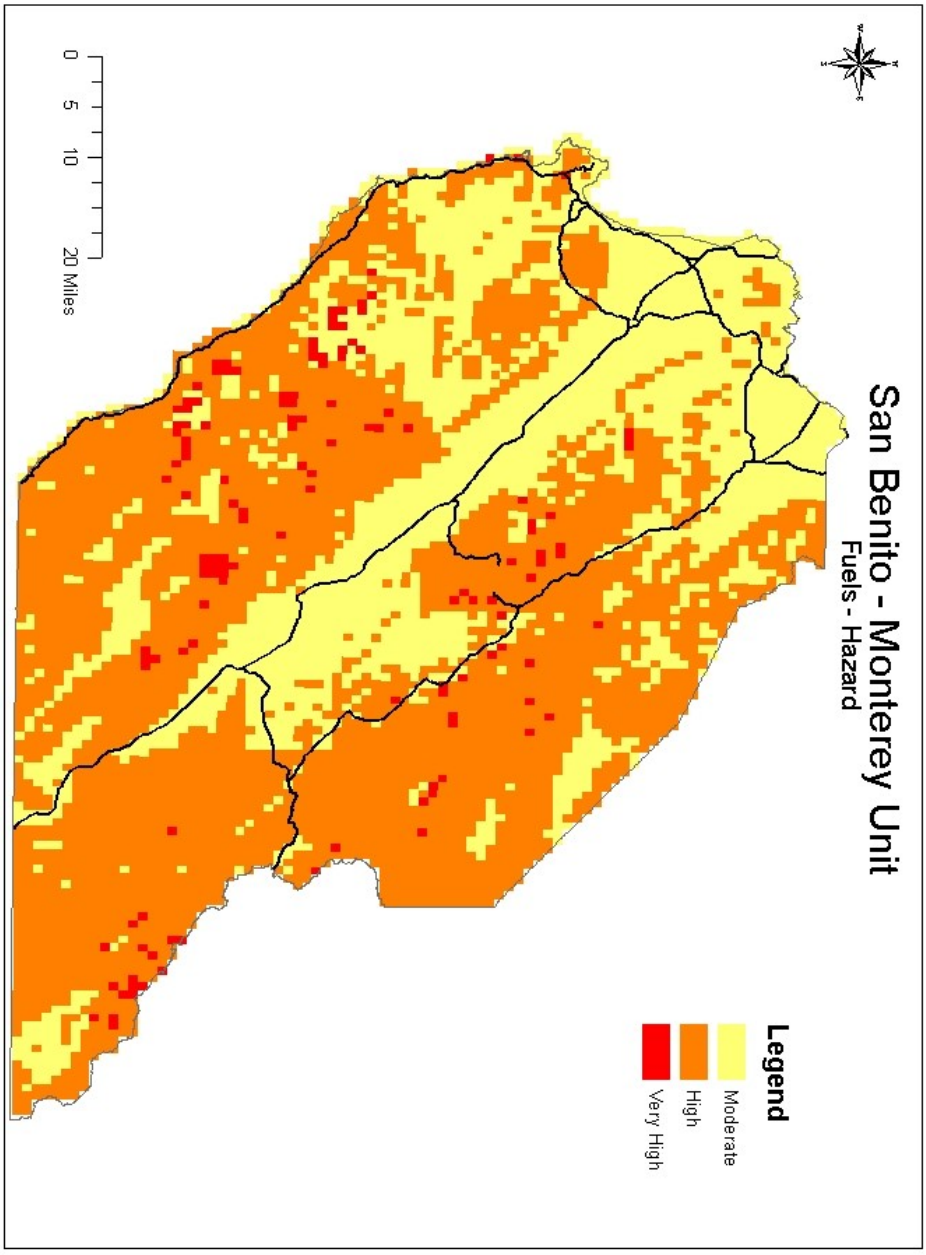
  Level of Service = Total SRA Fires
  Successful Initial Attacks

  Level of Service = 94%

  The Level of Service (LOS) score is intended as a tool to measure the effectiveness of initial attack success vs. failure when compared to other areas of the state. Unfortunately, some local factors are not taken into consideration, such as travel difficulty, resource drawdown, and concurrent incidents.

Fuels:

Four distinct wildland fuel types dominate the San Benito-Monterey Unit. As the map below depicts, topography and weather patterns seem to dictate the type of fuel in a specific area.



Fuel Model 1 (annual grasses)
Although inter-mixed with fuel model 4 (brush), this fuel model dominates the foothills of the eastern portion of the Unit. Extending from the Santa Clara County line southward along the foothills east of the Salinas valley, this fuel model represents more than fifty percent of the fuel types in the Unit.

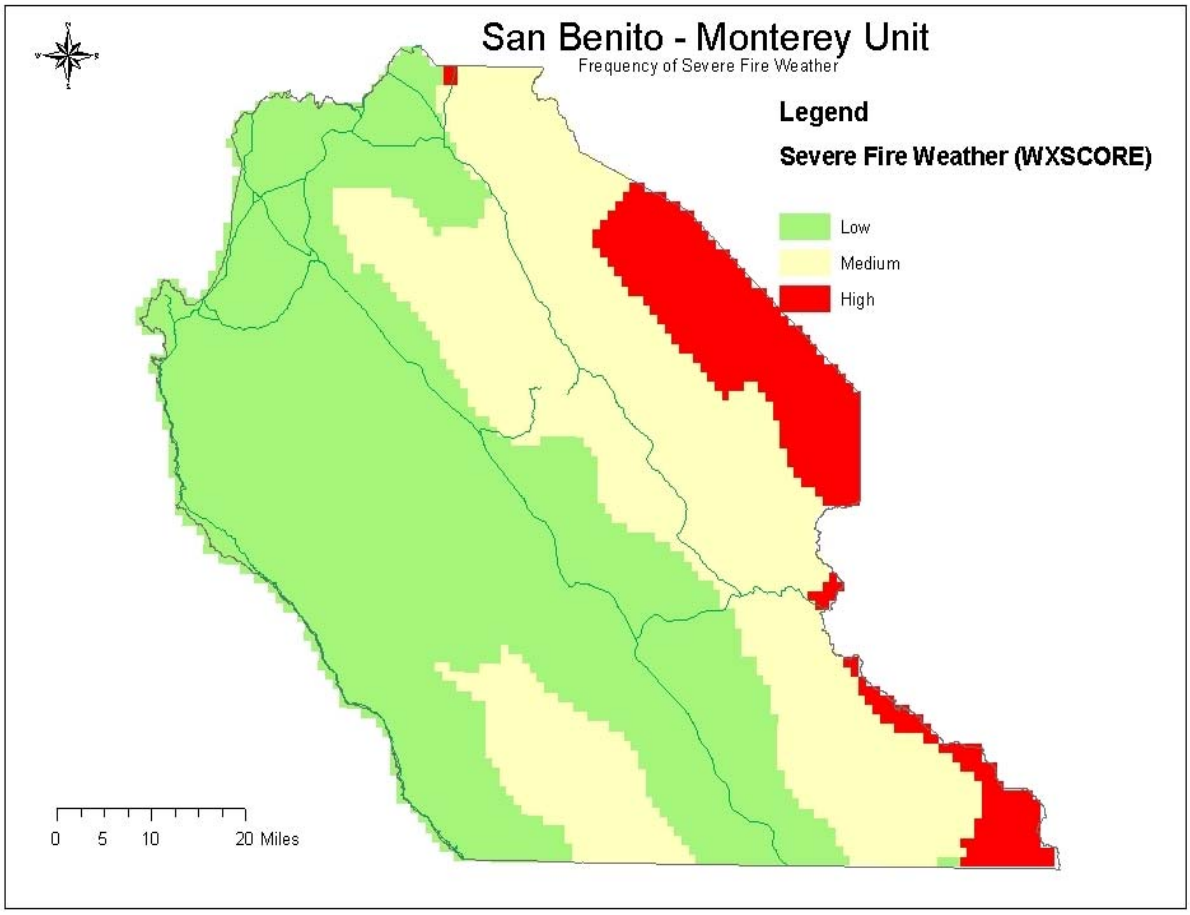
Fuel Model 2 (oak woodland)
This fuel model is typically located on the north and east facing slopes of the Unit. It is predominant in the northeast, southeast and southwest areas of both San Benito and Monterey counties and typically aligned with Fuel model 4 (brush), on the opposite facing slopes.

Fuel Model 4 (brush)
While a substantial amount of brush is located in the foothills east of the Salinas Valley, in the area of the Pinnacles National Monument, the majority of this fuel type is found in the mountains west of the Salinas Valley throughout the coastal range. Typically, it is found on south and western facing slopes in areas not used for cattle grazing. Brush can be found measuring over five feet in height, which corresponds to over 30 years of age.

Fuel Model 9 (conifers)
Conifers consisting of several species of pine and redwood are located in two distinct areas within the Unit, specifically, in the Fremont Peak area south of San Juan Bautista, and throughout the coastal mountains south of Monterey. The conifer forests extend into the Big Sur and Ventana Wilderness areas.

Severe Fire Weather:

The weather in the unit is divided into two basic patterns. The northwestern area of the unit experiences a common coastal weather pattern with low clouds and fog which burn off in mid day to temperatures in the mid 70's to 80's. The eastern and southern area experience mild fog conditions, but clear early in the day and commonly produce temperatures in the 90 to 100 degree range. Winters are mild with rainfall from 7 to 30+ inches. Wind speed and direction is variable, but is predominantly northwest at 7-10 MPH.



Designated Priority Areas

- **Target Areas**
- **Target Area Goals**
- **Potential Mitigation Actions**

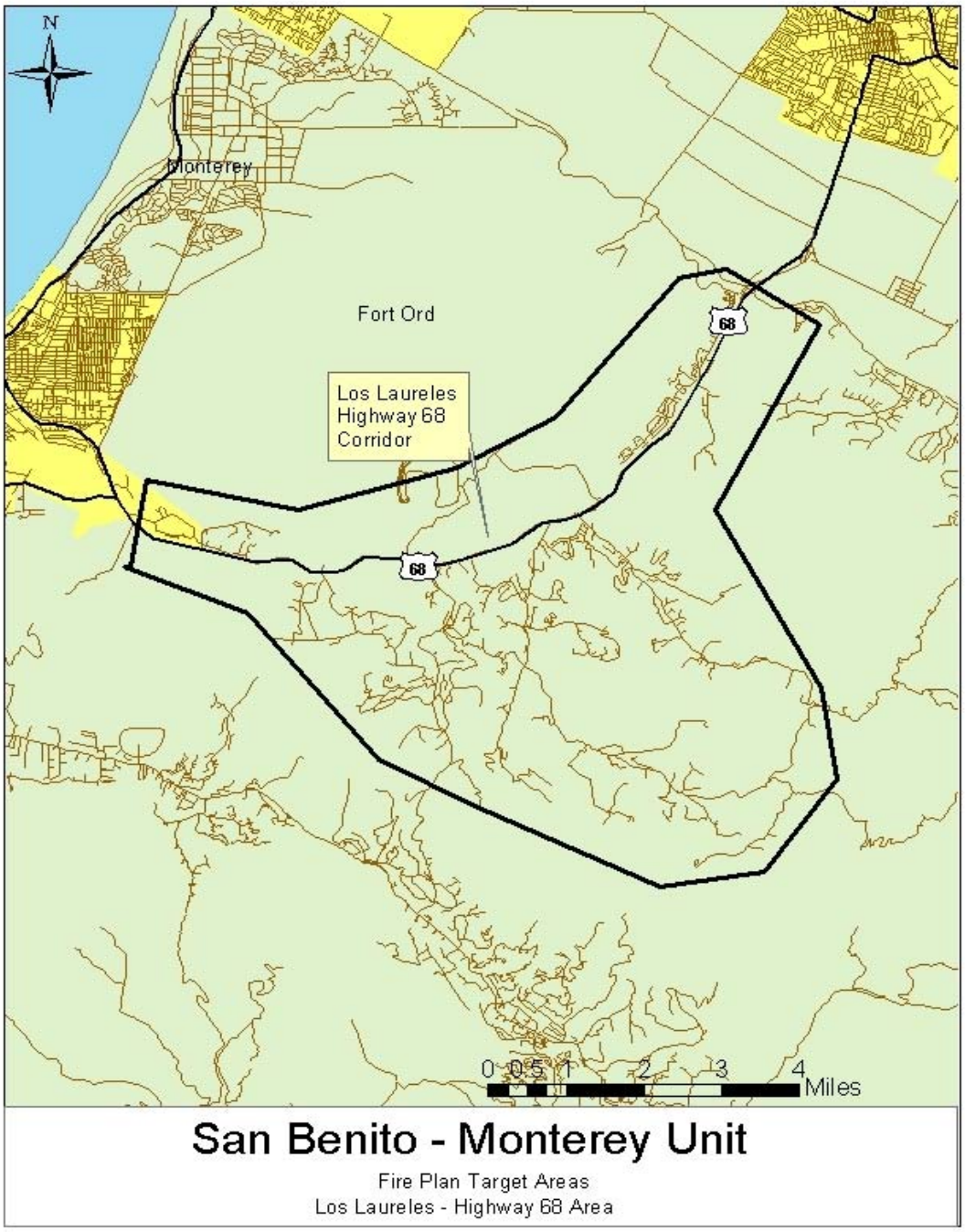
Priority Areas:

Several areas have been identified as “target areas” by the San Benito – Monterey Unit management team. The identification of these specific areas was based on available data from Pre-Fire Engineering assessments and stakeholder input. Additionally, local employees provided anecdotal and historical information that was considered useful in understanding local conditions. Target areas described in this plan are not listed in order of priority but rather as elements of the overall Unit Plan.

Target Areas:

- **State Highway 68 Corridor between Salinas and Monterey Peninsula / Laureles Grade**
- **Carmel Valley / Carmel Valley Village**
- **Carmel Highlands / Palo Colorado Canyon**
- **San Juan Canyon (San Benito County)**
- **Cachagua (Carmel Valley)**
- **Pine Canyon (King City)**
- **North Monterey County / Aromas**
- **Jack’s Peak / Pebble Beach**

Following the assessment of each Target Area, a series of potential mitigation actions was identified and agreed upon by the Unit Management Team. The following describes each area’s geographic location, Assets At Risk (AAR), and potential mitigation actions:


N
Monterey
Fort Ord
Los Laureles
Highway 68
Corridor
68
68
0 0.5 1 2 3 4 Miles
San Benito - Monterey Unit
Fire Plan Target Areas
Los Laureles - Highway 68 Area

State Highway 68 corridor / Laureles Grade:

This area is located in the western portion of the unit, between Salinas and the Monterey peninsula. The area is bounded on the north and west by the former Fort Ord Army Base, on the south by Carmel Valley, and on the west by Jack's Peak.

Assets At Risk (AAR) include a large number single and multi-family residences. Highway 68 is a major travel route between Salinas and the Monterey Peninsula. Several commercial / industrial parks are located along Highway 68 as is the Laguna Seca Recreation Area. Large areas of BLM wildland are located along the northern border. This area contains large plots of vegetation that have not burned in several years, resulting in a build-up of decadent mature fuels.

Target Area Goals:

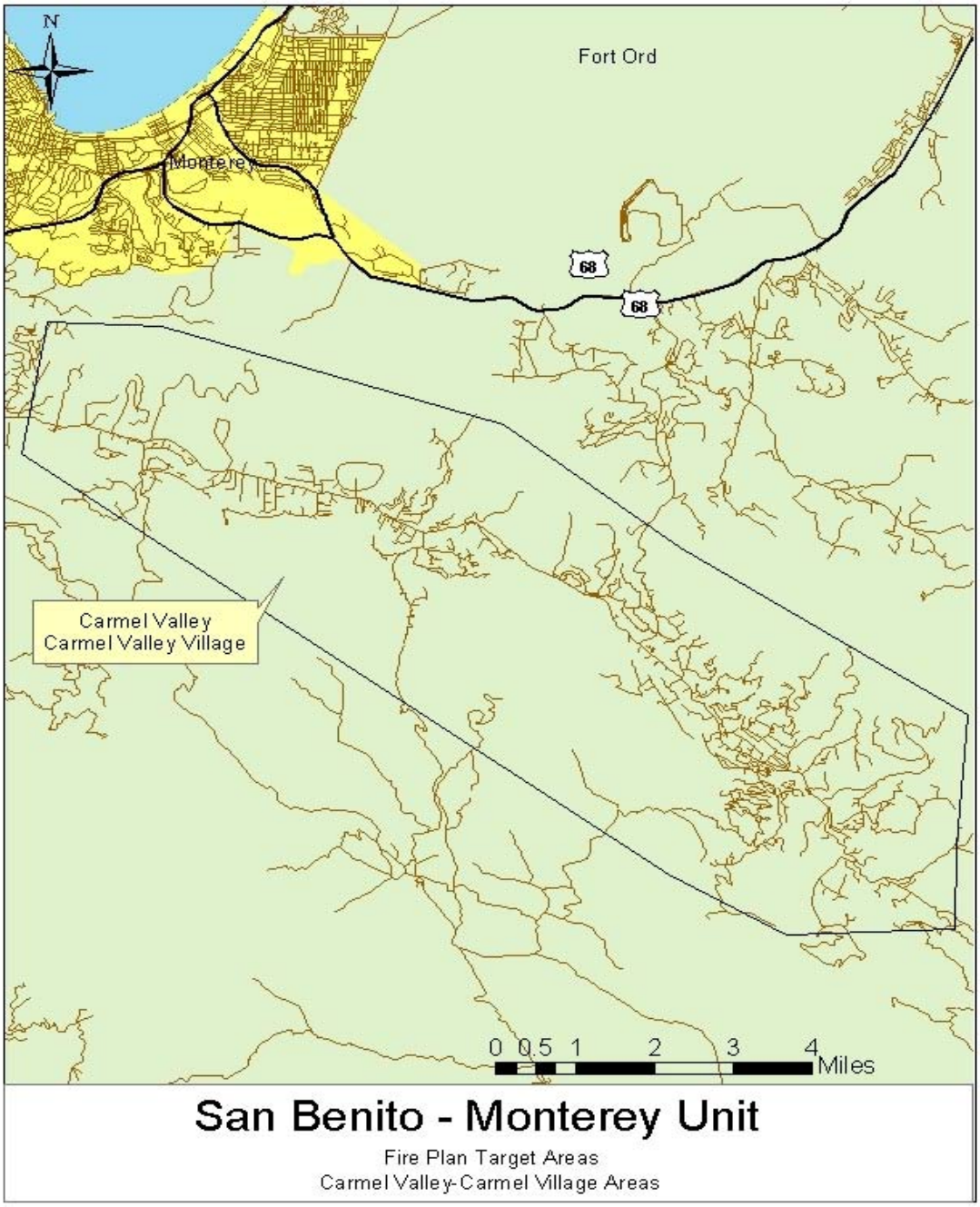
- Reduction of available wildland fuels, particularly adjacent to identified Assets at Risk (AAR) and primary access/egress routes
- Increased public awareness and education relative to wildland fire threat and defensible space

Potential Mitigating Actions:

The following actions have been identified to achieve the Unit Fire Plan goals for this Target Area:

- Annual inspection of all electrical transmission and distribution lines over 750 volts to ensure compliance with Public Resources Code Sections 4292-4294 for wildland fuels clearance.
- Annual inspection and enforcement of fire safety and clearance requirements of Public Resources Code Section 4291 for at least 33% of structures within target area.
- Continue to provide chipper services as available to assist property owners in meeting the wildland fire safety requirements of Public Resources Code Section 4291 and reducing the overall wildland fuels load adjacent to identified assets at risk.
- Reduction and/or removal of wildland fuels along primary access/egress routes to reduce the incidence of roadside ignitions, and to ensure safe access and egress by firefighters and residents in the event of a wildland fire emergency.
- Identify "Safe Zones" within the target area to provide a safe refuge for residents in the event of a wildland fire emergency, and ensure dissemination of this information throughout the target area.
- Encourage development and distribution of wildland emergency plans for specific sub-areas of the target area. Such plans should

identify access and evacuation routes, safe zones, water sources, helibases and helispots, command posts, staging areas, and/or any other significant element of a widland fire strategy for the target area that can be pre-planned and identified.



San Benito - Monterey Unit

Fire Plan Target Areas
Carmel Valley-Carmel Village Areas

Carmel Valley / Carmel Valley Village:

This area is located in the western portion of the Unit on both sides of Carmel Valley Road from State Highway 1 west to the Sleepy Hollow subdivision. It is bordered by Jack's Peak and State Highway 68 on the north, Garland Ranch Regional Park on the south, City of Carmel-By-The-Sea on the west, and Cachagua Fire Protection District on the east.

Assets At Risk (AAR) include a large number of single and multi-family residences and other rural structures. Carmel Valley Road is a primary travel route leading to and from the Monterey Peninsula from Hwy 101 in the Salinas Valley to Hwy 1 in Carmel. Several commercial/retail centers are located along Carmel Valley Road as well as the Rancho Canada, Quail Lodge, and Carmel Valley golf courses. Several wineries are also located in the area. Large areas of National Forest wildland / wilderness are located to the south of the target area. This area contains large plots of vegetation that has not burned in several years, resulting in a build-up of decadent mature fuel.

Target Area Goals:

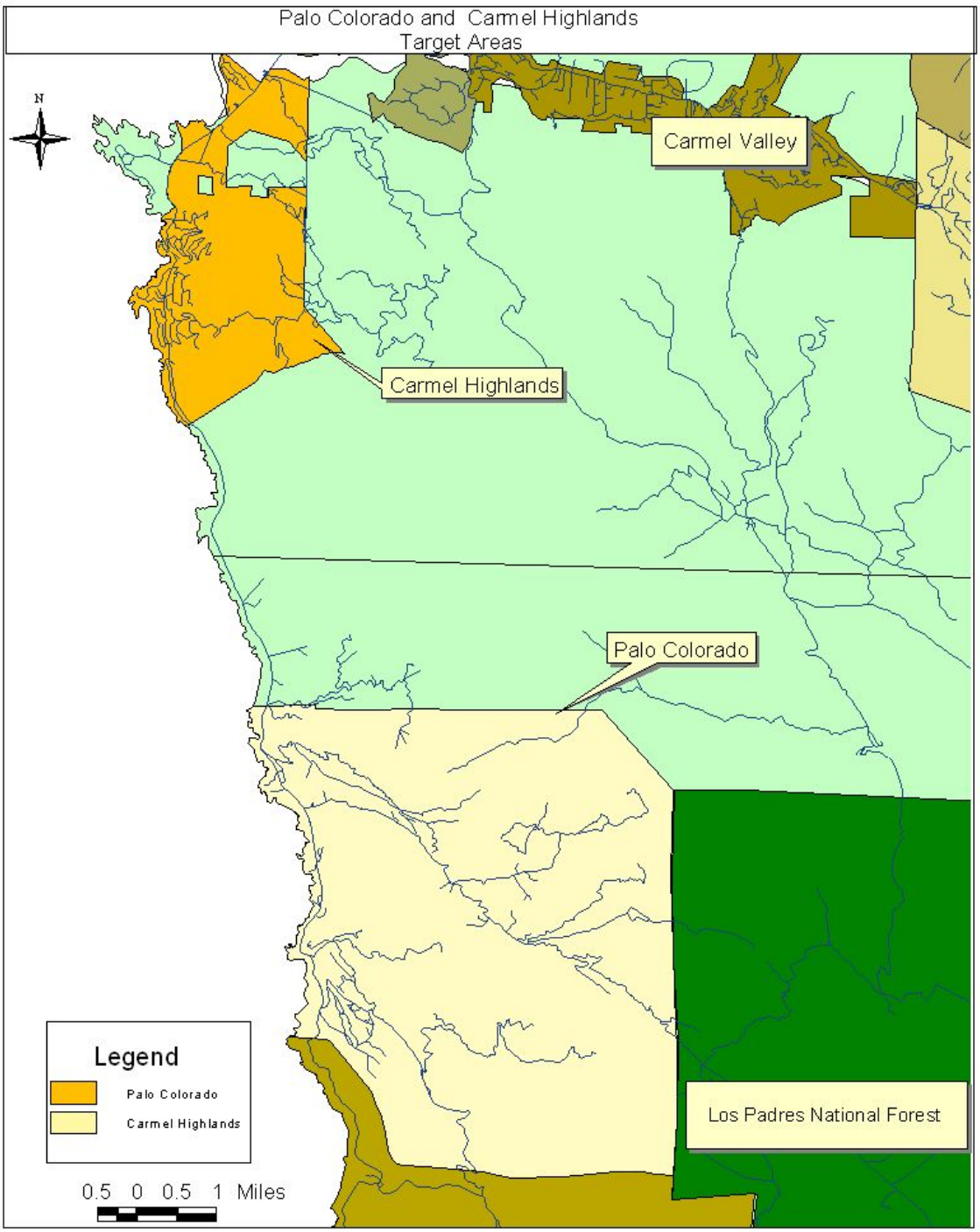
- Reduction of available wildland fuels, particularly adjacent to identified Assets at Risk (AAR) and primary access/egress routes
- Increased public awareness and education relative to wildland fire threat and defensible space

Potential Mitigating Actions:

The following actions have been identified to achieve the Unit Fire Plan goals for this Target Area:

- Annual inspection of all electrical transmission and distribution lines over 750 volts to ensure compliance with Public Resources Code Sections 4292-4294 for wildland fuels clearance.
- Annual inspection and enforcement of fire safety and clearance requirements of Public Resources Code Section 4291 for at least 33% of structures within target area.
- Continue to provide chipper services as available to assist property owners in meeting the wildland fire safety requirements of Public Resources Code Section 4291 and reducing the overall wildland fuels load adjacent to identified assets at risk.
- Reduction and/or removal of wildland fuels along primary access/egress routes to reduce the incidence of roadside ignitions, and to ensure safe access and egress by firefighters and residents in the event of a wildland fire emergency.

- Identify “Safe Zones” within the target area to provide a safe refuge for residents in the event of a wildland fire emergency, and ensure dissemination of this information throughout the target area.
- Encourage development and distribution of wildland emergency plans for specific sub-areas of the target area. Such plans should identify access and evacuation routes, safe zones, water sources, helibases and helispots, command posts, staging areas, and/or any other significant element of a widland fire strategy for the target area that can be pre-planned and identified.
- Work closely with the Monterey Fire Safe Council and local stakeholders to identify additional mitigating actions suitable for the area.


Palo Colorado and Carmel Highlands
Target Areas
N
Carmel Valley
Carmel Highlands
Palo Colorado
Los Padres National Forest
Legend
Palo Colorado
Carmel Highlands
0.5 0 0.5 1 Miles

Carmel Highlands / Palo Colorado Canyon:

This area is located in the western coastal area of the Unit, and is bordered by the City of Carmel-By-The-Sea on the north, the Los Padres National Forest on the east, Andrew Molera State Park and Big Sur on the south and the Pacific Ocean on the west.

Assets At Risk (AAR) include single and multi-family residences and other rural structures, many located in remote areas with limited access. The Point Lobos State Reserve, Garrapata State Beach, and the California Sea Otter Refuge are also within this target area. Highway 1 is the only access/egress route for the target area.

Target Area Goals:

- Reduction of available wildland fuels, particularly adjacent to identified Assets at Risk (AAR) and primary access/egress routes
- Increased public awareness and education relative to wildland fire threat and defensible space

Potential Mitigating Actions:

The following actions have been identified to achieve the Unit Fire Plan goals for this Target Area:

- Annual inspection of all electrical transmission and distribution lines over 750 volts to ensure compliance with Public Resources Code Sections 4292-4294 for wildland fuels clearance.
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- Encourage development and distribution of wildland emergency plans for specific sub-areas of the target area. Such plans should identify access and evacuation routes, safe zones, water sources, helibases and helispots, command posts, staging areas, and/or any

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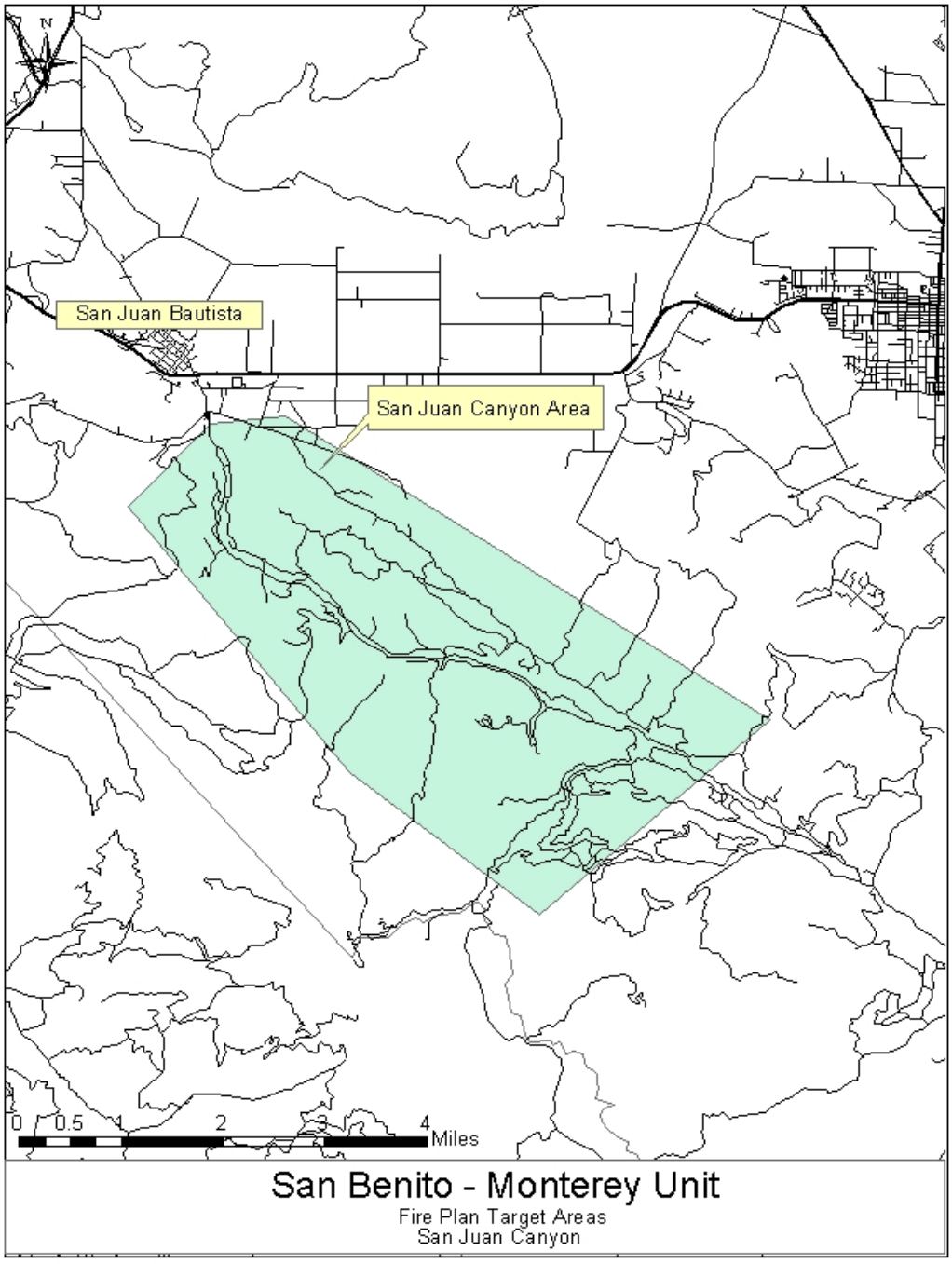
- Work closely with the Monterey Fire Safe Council and local stakeholders to identify additional mitigating actions suitable for the area.


N
San Juan Bautista
San Juan Canyon Area
0 0.5 1 2 3 4 Miles
San Benito - Monterey Unit
Fire Plan Target Areas
San Juan Canyon

San Juan Canyon:

This area is located southwest of the community of San Juan Bautista, and is bordered by State Highway 156 on the north, Fremont Peak on the west, Hollister Hills SORV park on the east and Wildhorse canyon on the south.

Assets At Risk (AAR) include single and multi-family residential structures, many located in remote areas with limited access, and several large ranches. Access to and egress from the entire target area is very limited.

Target Area Goals:

- Reduction of available wildland fuels, particularly adjacent to identified Assets at Risk (AAR) and primary access/egress routes
- Increased public awareness and education relative to wildland fire threat and defensible space

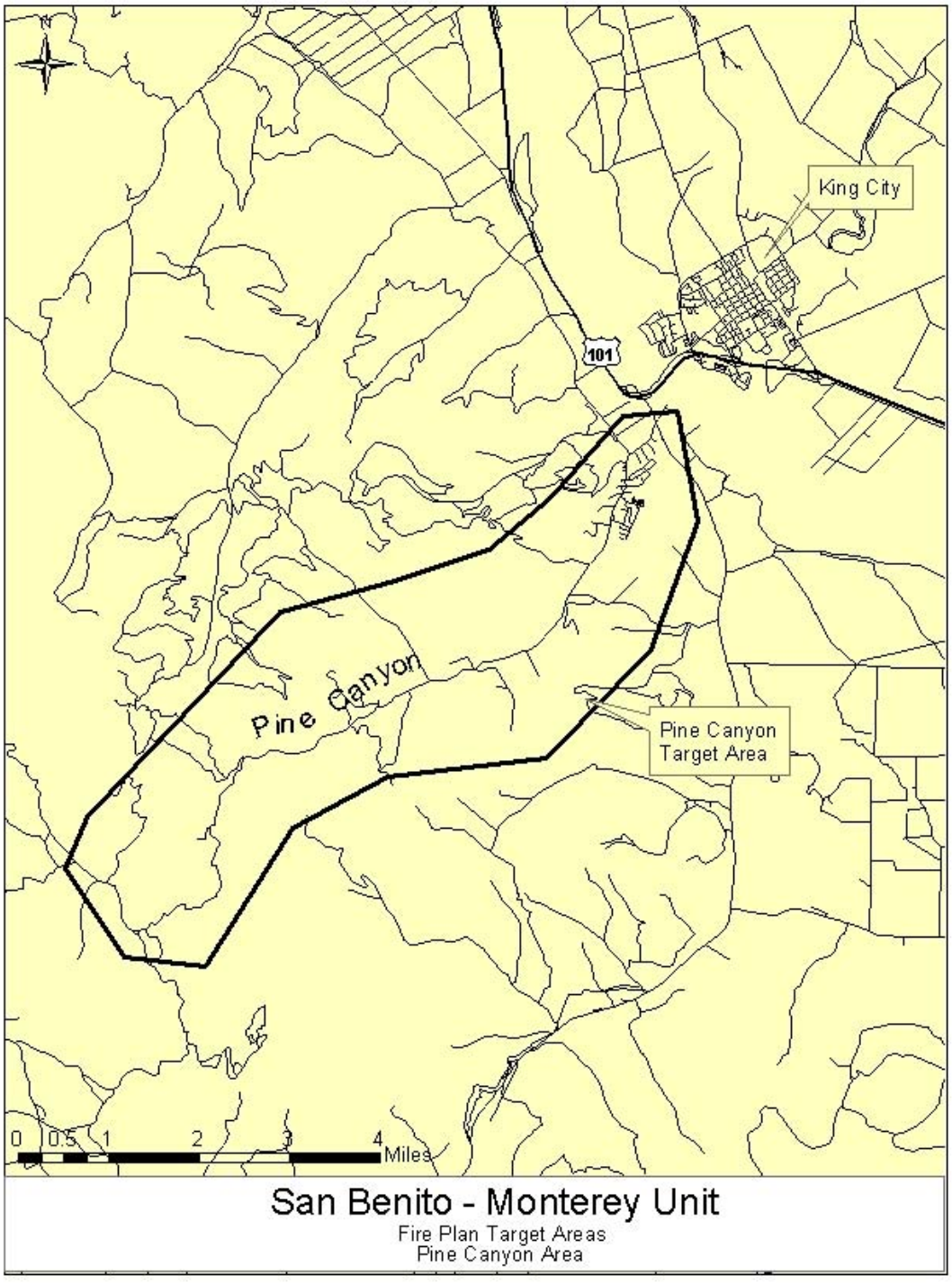
Potential Mitigating Actions:

The following actions have been identified to achieve the Unit Fire Plan goals for this Target Area:

- Annual inspection of all electrical transmission and distribution lines over 750 volts to ensure compliance with Public Resources Code Sections 4292-4294 for wildland fuels clearance.
- Annual inspection and enforcement of fire safety and clearance requirements of Public Resources Code Section 4291 for at least 33% of structures within target area.
- Continue to provide chipper services as available to assist property owners in meeting the wildland fire safety requirements of Public Resources Code Section 4291 and reducing the overall wildland fuels load adjacent to identified assets at risk.
- Reduction and/or removal of wildland fuels along primary access/egress routes to reduce the incidence of roadside ignitions, and to ensure safe access and egress by firefighters and residents in the event of a wildland fire emergency.
- Identify “Safe Zones” within the target area to provide a safe refuge for residents in the event of a wildland fire emergency, and ensure dissemination of this information throughout the target area.
- Encourage development and distribution of wildland emergency plans for specific sub-areas of the target area. Such plans should identify access and evacuation routes, safe zones, water sources, helibases and helispots, command posts, staging areas, and/or any

other significant element of a widland fire strategy for the target area that can be pre-planned and identified.

- Work closely with the San Benito County Fire Safe Council and local stakeholders to identify additional mitigating actions suitable for the area.


King City
101
Pine Canyon
Pine Canyon
Target Area
0 0.5 1 2 3 4 Miles
San Benito - Monterey Unit
Fire Plan Target Areas
Pine Canyon Area

Pine Canyon

This area is located southwest of the community of King City in southern Monterey County. It is bordered by Hwy 101 on the north and east,

Assets At Risk (AAR) include single family and multi-unit residential structures Access to the area is limited and the potential for entrapment of residents and emergency responders is extreme. This area continues to grow with the construction of new residential sub-division projects in the planning stages

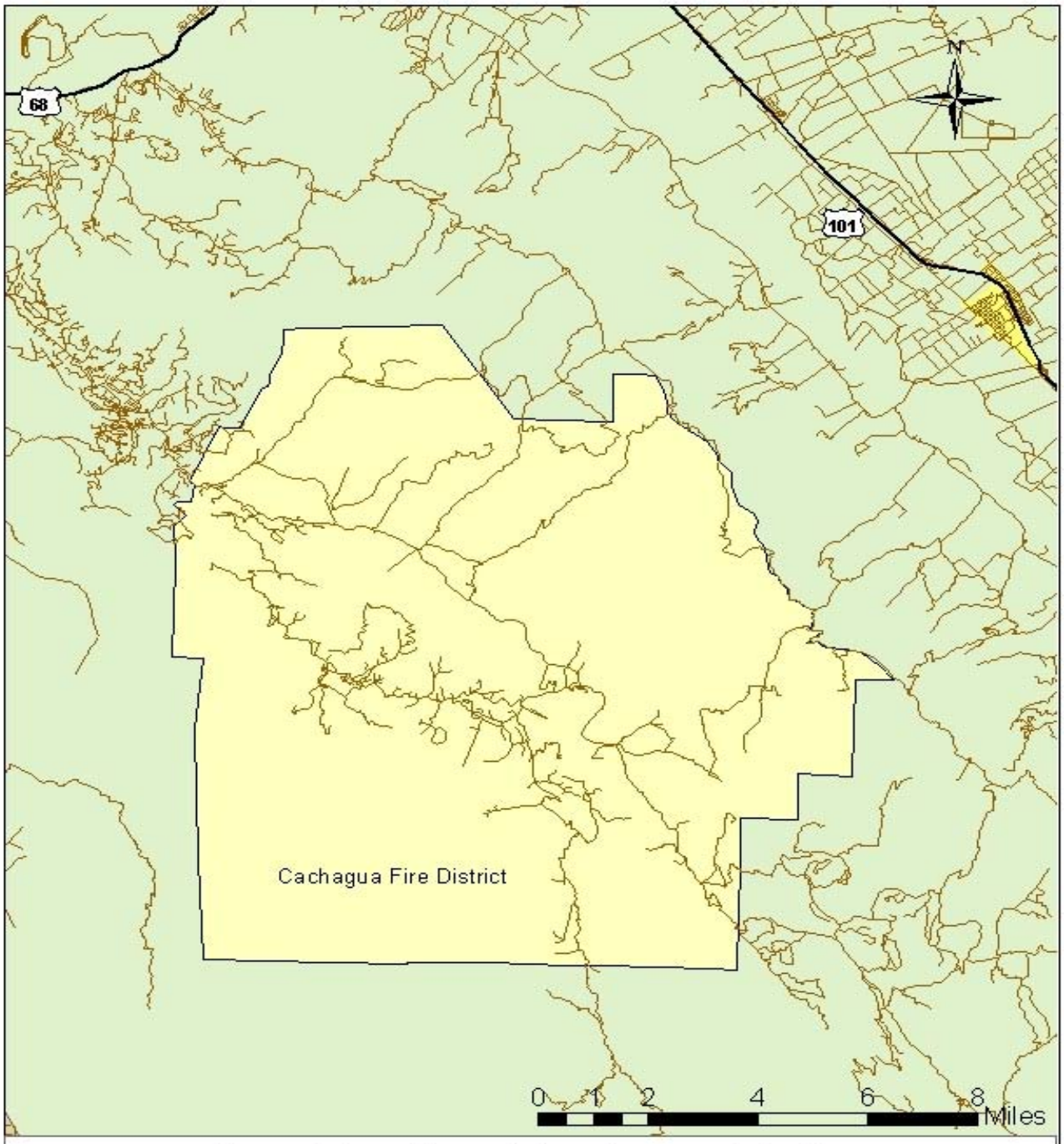
General description of the desired future condition.

Ideally, this area will benefit from a combination of fuel modification, aggressive inspection, emergency planning, and public education

Potential prescriptions

The following prescriptions have been identified as potential successful methods of achieving the Unit's Fire Plan goals for this Target Area:

- Annual powerline inspections to insure PRC compliance
- Targeted LE-38 inspections to achieve a minimum 33% of the structures in the Target area per year.
- Roadside fuel modification to insure egress / exit route safety and reduce the possibility of "roadside starts".
- Identify "Safety Zones" to insure that residents of the area have the ability to evacuate to a safe area during an emergency. Residents/ stakeholders will participate in the planning and placement of Safety Zones. Additionally, a "Wildland Fire / Emergency Pre-Plan" will be designed to prepare first responders and stakeholders during the initial attack of any fire. This is vital in that residents in the area are very limited when attempting to leave the area in case of an emergency
- Work closely with the Monterey County FireSafe and local fire agencies to identify additional prescriptions suitable for the area.



San Benito - Monterey Unit

Fire Plan Target Areas
Cachagua Fire District

Cachagua:

This target area is located in the western portion of the Unit, and is situated south of Carmel Valley Road and north of the Las Padres National Forest east of Carmel Valley Village. The area is served by the Cachagua Fire Protection District.

Assets At Risk (AAR) include single and multi-family residential structures, many which are located in remote areas with limited access, and several large ranches. Fire history in the area is minimal, leading to the overgrowth of decadent brush and light flashy fuels.

Target Area Goals:

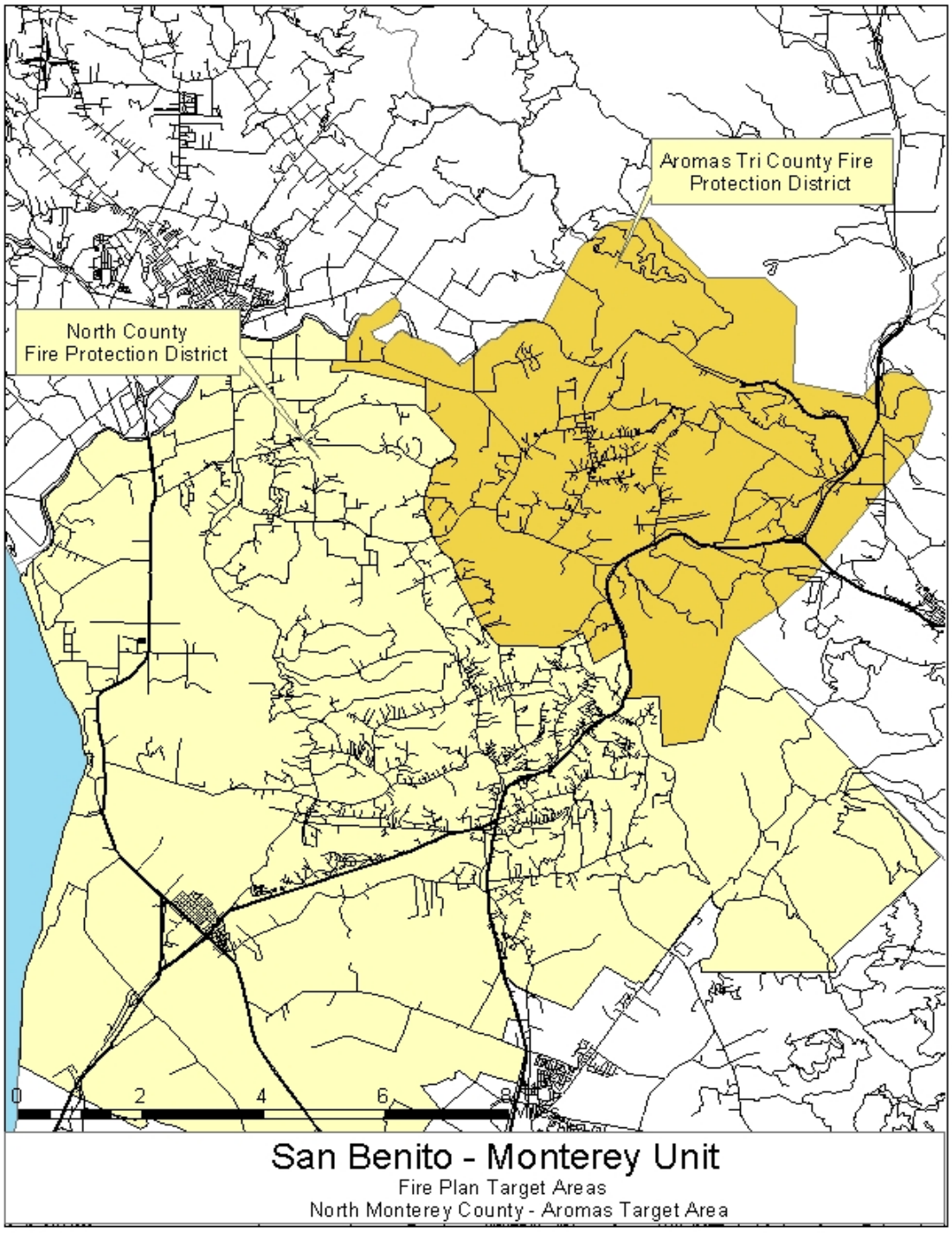
- Reduction of available wildland fuels, particularly adjacent to identified Assets at Risk (AAR) and primary access/egress routes
- Increased public awareness and education relative to wildland fire threat and defensible space

Potential Mitigating Actions:

The following actions have been identified to achieve the Unit Fire Plan goals for this Target Area:

- Annual inspection of all electrical transmission and distribution lines over 750 volts to ensure compliance with Public Resources Code Sections 4292-4294 for wildland fuels clearance.
- Annual inspection and enforcement of fire safety and clearance requirements of Public Resources Code Section 4291 for at least 33% of structures within target area.
- Continue to provide chipper services as available to assist property owners in meeting the wildland fire safety requirements of Public Resources Code Section 4291 and reducing the overall wildland fuels load adjacent to identified assets at risk.
- Reduction and/or removal of wildland fuels along primary access/egress routes to reduce the incidence of roadside ignitions, and to ensure safe access and egress by firefighters and residents in the event of a wildland fire emergency.
- Identify “Safe Zones” within the target area to provide a safe refuge for residents in the event of a wildland fire emergency, and ensure dissemination of this information throughout the target area.

- Encourage development and distribution of wildland emergency plans for specific sub-areas of the target area. Such plans should identify access and evacuation routes, safe zones, water sources, helibases and helispots, command posts, staging areas, and/or any other significant element of a widland fire strategy for the target area that can be pre-planned and identified.
- Work closely with the Monterey Fire Safe Council and local stakeholders to identify additional mitigating actions suitable for the area.


Aromas Tri County Fire Protection District
North County Fire Protection District
0
2
4
6
8
San Benito - Monterey Unit
Fire Plan Target Areas
North Monterey County - Aromas Target Area

North Monterey County / Aromas:

This area is located in the northwestern part of the Unit**,** situated west of State Highway 101, south of State Highway 129, north of State Highway 156, and east of the Pacific Ocean. It includes the communities of Aromas, Pajaro, Las Lomas, Prunedale, and Moss Landing.

Assets At Risk (AAR) include the four major highways noted above. Each of these routes is vital to vehicular traffic in the region. Although considered a "Rural" region, the area contains a large amount of single-family dwellings, ranchland and commercial/retail properties. Additionally, the Moss Landing power plant and Moss Landing Harbor are located on the western edge of the target area. Moss Landing and Zmudowski State beaches and the Elkhorn Slough provide scenic, recreation, and wildlife refuge. The potential for a large damaging fire in this area is increased dramatically due to the large number of eucalyptus trees throughout the area.

Target Area Goals:

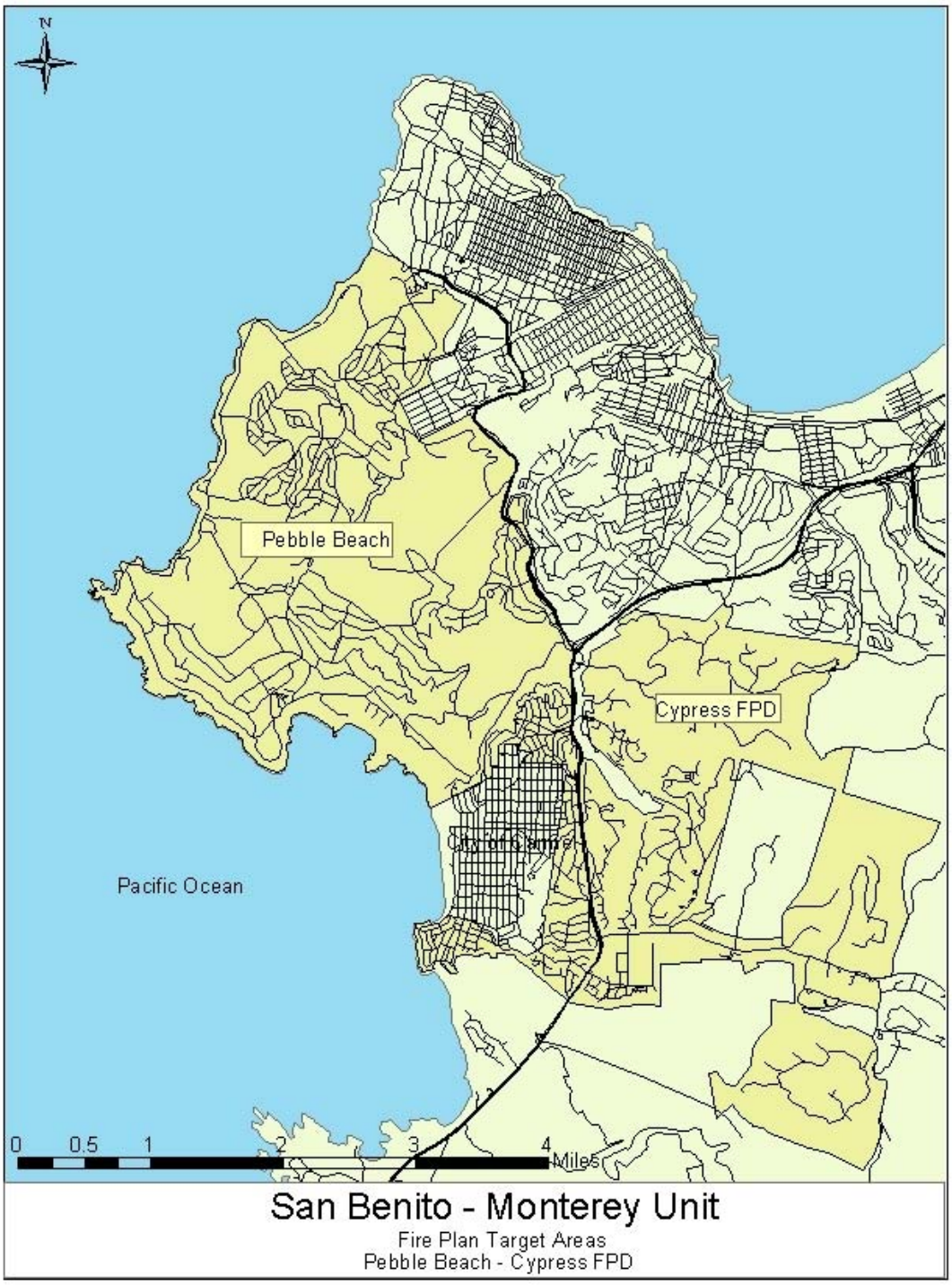
- Reduction of available wildland fuels, particularly adjacent to identified Assets at Risk (AAR) and primary access/egress routes
- Increased public awareness and education relative to wildland fire threat and defensible space

Potential Mitigating Actions:

The following actions have been identified to achieve the Unit Fire Plan goals for this Target Area:

- Annual inspection of all electrical transmission and distribution lines over 750 volts to ensure compliance with Public Resources Code Sections 4292-4294 for wildland fuels clearance.
- Annual inspection and enforcement of fire safety and clearance requirements of Public Resources Code Section 4291 for at least 33% of structures within target area.
- Continue to provide chipper services as available to assist property owners in meeting the wildland fire safety requirements of Public Resources Code Section 4291 and reducing the overall wildland fuels load adjacent to identified assets at risk.
- Reduction and/or removal of wildland fuels along primary access/egress routes to reduce the incidence of roadside ignitions, and to ensure safe access and egress by firefighters and residents in the event of a wildland fire emergency.

- Identify “Safe Zones” within the target area to provide a safe refuge for residents in the event of a wildland fire emergency, and ensure dissemination of this information throughout the target area.
- Encourage development and distribution of wildland emergency plans for specific sub-areas of the target area. Such plans should identify access and evacuation routes, safe zones, water sources, helibases and helispots, command posts, staging areas, and/or any other significant element of a widland fire strategy for the target area that can be pre-planned and identified.
- Work closely with the Monterey Fire Safe Council and local stakeholders to identify additional mitigating actions suitable for the area.


N
Pebble Beach
Cypress FPD
Pacific Ocean
0 0.5 1 2 3 4 Miles
San Benito - Monterey Unit
Fire Plan Target Areas
Pebble Beach - Cypress FPD

Jack's Peak / Pebble Beach:

This area is located on the Monterey Peninsula in the western portion of the Unit, and is bordered by the Pacific Ocean on the west, the City of Monterey on the north, Carmel Valley and the Highway 68 corridor on the east, and the City of Carmel-By-The-Sea on the south. This area represents one of the most scenic and affluent communities in California.

Assets At Risk (AAR) for this area are varied, including single-family residences, resort areas, championship golf courses, and areas of spectacular scenic beauty. Highway 1 is the primary north-south travel route, providing access to Big Sur and other coastal areas to the south. The potential for a large damaging fire in this area is high. The vegetation lends itself to "crown" type timber fires and the roads in the area can be confusing. The entire target area has limited access and egress.

Target Area Goals:

- Reduction of available wildland fuels, particularly adjacent to identified Assets at Risk (AAR) and primary access/egress routes
- Increased public awareness and education relative to wildland fire threat and defensible space

Potential Mitigating Actions:

The following actions have been identified to achieve the Unit Fire Plan goals for this Target Area:

- Annual inspection of all electrical transmission and distribution lines over 750 volts to ensure compliance with Public Resources Code Sections 4292-4294 for wildland fuels clearance.
- Annual inspection and enforcement of fire safety and clearance requirements of Public Resources Code Section 4291 for at least 33% of structures within target area.
- Continue to provide chipper services as available to assist property owners in meeting the wildland fire safety requirements of Public Resources Code Section 4291 and reducing the overall wildland fuels load adjacent to identified assets at risk.
- Reduction and/or removal of wildland fuels along primary access/egress routes to reduce the incidence of roadside ignitions, and to ensure safe access and egress by firefighters and residents in the event of a wildland fire emergency.
- Identify "Safe Zones" within the target area to provide a safe refuge for residents in the event of a wildland fire emergency, and ensure dissemination of this information throughout the target area.

- Encourage development and distribution of wildland emergency plans for specific sub-areas of the target area. Such plans should identify access and evacuation routes, safe zones, water sources, helibases and helispots, command posts, staging areas, and/or any other significant element of a widland fire strategy for the target area that can be pre-planned and identified.
- Continue enforcement of the PBCSD Fire Defense Plan to ensure compliance and maintenance of emergency access routes, designated open space areas, and undeveloped parcels.
- Work closely with the Monterey Fire Safe Council and local stakeholders to identify additional mitigating actions suitable for the area.

Stakeholders:

Stakeholders are defined as any person, agency or organization with a particular interest, or "*stake,*" in fire safety and protection of assets from wildfires.

- **Local Fire Agencies**

  Big Sur Volunteer Fire Brigade
  Cachagua Fire Protection District
  Carmel-By-The-Sea Fire Department
  Carmel Valley Fire Protection District
  Cypress Fire Protection District
  Gonzales Fire Protection District
  Greenfield Fire Protection District
  King City Fire Department
  Marina Department of Public Safety
  Mid-Coast Fire Brigade
  Monterey Fire Department
  Monterey Peninsula Airport District Fire Department
  North County Fire Protection District
  Pebble Beach Community Services District
  Pacific Grove Fire Department
  Presidio of Monterey Fire Department
  Salinas Fire Department
  Salinas Rural Fire Protection District
  Seaside Fire Department
  Soledad Fire Department
  South Monterey County Fire Protection District
  United States Dept. of Agriculture - Forest Service
  United States Bureau of Land Management
  Hollister Fire Department
  San Juan Bautista Fire Department

- **Fire Safe Councils**

  Monterey Fire Safe Council
  Box 4479
  Carmel, CA 93921
  rawitzer@mbay.net
  Office: (831) 455 2498

  San Benito Fire Safe Council
  San Juan Bautista California
  Sandra Davidson, Chairperson
  sgrsmd@hollinet.com

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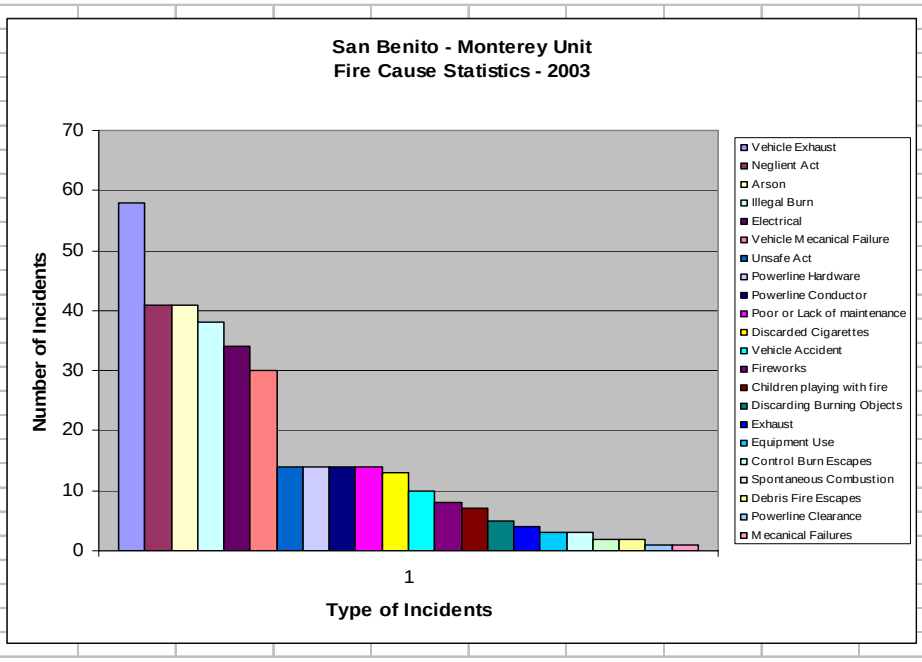
- **Government Agencies**

  California Department of Parks and Recreation
  California Department of Transportation (CalTrans)
  Monterey County Regional Parks District
  Monterey County Department of Public Works
  San Benito County Dept. of Parks and Recreation
  San Benito County Dept. of Public Works

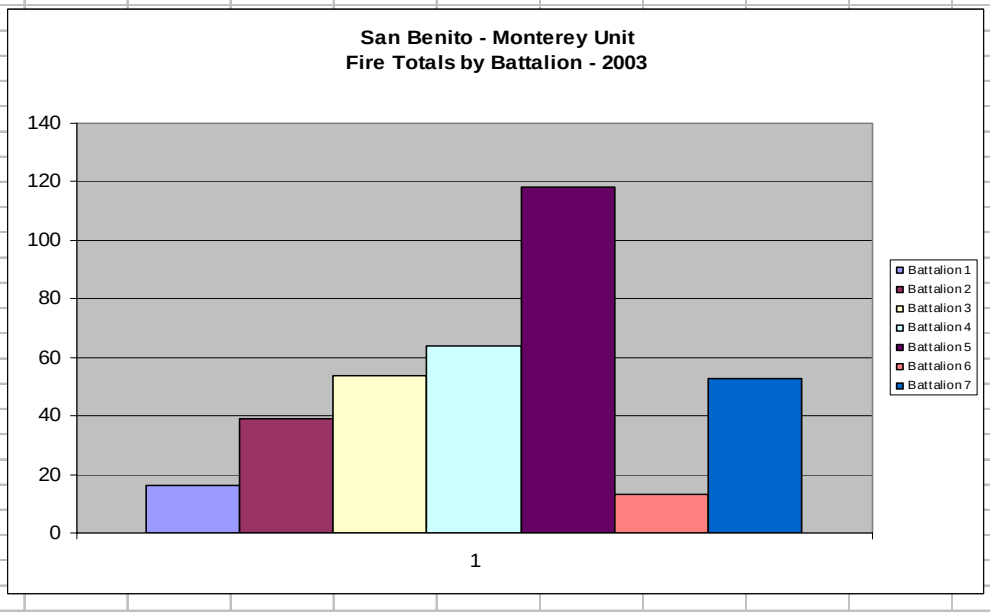
- **Other Stakeholders**

  Pacific Gas & Electric Co.
  Cal-Am Water

Vehicle Exhaust	58
Neglient Act	41
Arson	41
Illegal Burn	38
Electrical	34
Vehicle Mecanical Failure	30
Unsafe Act	14
Powerline Hardware	14
Powerline Conductor	14
Poor or Lack of maintenance	14
Discarded Cigarettes	13
Vehicle Accident	10
Fireworks	8
Children playing with fire	7
Discarding Burning Objects	5
Exhaust	4
Equipment Use	3
Control Burn Escapes	3
Spontaneous Combustion	2
Debris Fire Escapes	2
Powerline Clearance	1
Mecanical Failures	1
Total	357



Battalion 1	16
Battalion 2	39
Battalion 3	54
Battalion 4	64
Battalion 5	118
Battalion 6	13
Battalion 7	53
Total	357



PEBBLE BEACH FIRE DEFENSE PLAN

FIRE DEFENSE PLAN
AND
EMERGENCY ACCESS ROUTES
FOR
DESIGNATED OPEN SPACE AREAS
AND
OTHER UNDEVELOPED PARCELS

Adopted: June 1988
Revised: August 1994
Revised: October 2000
Revised: November 2002

FIRE DEFENSE PLAN

The *Fire Defense Plan* ("FDP") identifies land treatment measures designed as part of a fire defense system to facilitate fire control. This plan is designed for the Huckleberry Hill / SFB Morse Preserve, Pescadero Canyon and Navajo Tract open space areas, and other undeveloped vacant parcels.

I. EMERGENCY ACCESS – FIRE ROAD (BLUE)

A network of roads provides safe and ready access for emergency equipment. Fire Road requirements are:

A. Minimum 12-foot roadbed width
B. Minimum 13' 6" vertical clearance over entire width and length, including any turnouts or turnarounds
C. Minimum 30-foot turn radius
D. No "islands" at intersections
E. Drainage and erosion measures conforming to current engineering practices
F. Minimum gate width of 12 feet, fully open
G. Locked gates shall have a Fire Department Knox padlock.

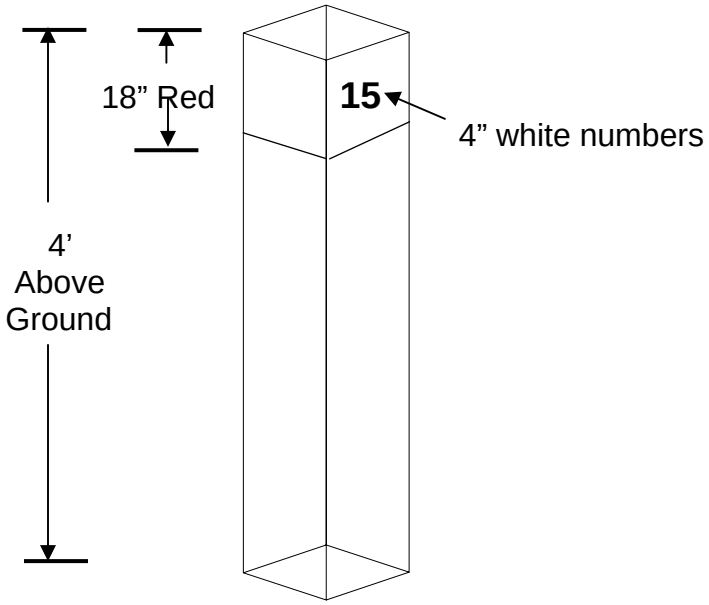
II. EMERGENCY ACCESS – FIREBREAK (RED)

In addition to the above requirements, all fuels within 20 feet of both road edges in emergency access roads which have been identified as firebreaks shall be modified or removed as follows:

A. Cut and remove all brush.
B. Remove all dead standing trees.
C. Remove all dead fallen material.
D. Remove all dead tree limbs within 10 feet of ground level.
E. Remove all other tree limbs within 5 feet of ground level.
F. All cut material shall be chipped and spread or removed from the area.

III. EMERGENCY ACCESS – ROAD IDENTIFICATION

At the direction of the Fire Department, all emergency access roads shall be numbered and identified with a numbered road sign meeting the following minimum requirements. Minimum 4" high and 1" stroke white numbers routed on all sides at the top of a 6" x 6" post exposed at least four feet above ground level. The top 18" of the post shall be painted red.



IV. MAINTENANCE

All emergency fire roads and firebreaks shall be maintained to the above minimum standards by June 1 of each year.

V. PROTECTION OF ENVIRONMENTALLY SENSITIVE PLANT SPECIES

This section is intended to clarify standard operating procedures for safeguarding threatened or endangered environmentally sensitive plant species, whenever possible, without unduly compromising fire hazard clearance standards.

The Open Space Advisory Committee ("OSAC") Plan of the Del Monte Forest Land Use Plan designates those plant species within the Del Monte Forest that are considered environmentally sensitive.

Some environmentally sensitive plant species have been identified within the open space areas covered by this plan. All Fire Defense Plan standards shall continue to apply. However, the property owner and Fire Department will coordinate efforts to avoid cutting or removing environmentally sensitive species.

Fire protection clearance work must be undertaken at times in designated open space areas within the Fire Defense Plan areas where protected, endangered or threatened plant species have been identified in the Del Monte Forest Plan Use Plan and/or by the Open Space Advisory Committee. The PBCSD Fire Department shall supervise such work when it is required, and the following procedures shall apply:

A. The property owner shall designate a person who has knowledge of the property, terrain, natural habitat and access. That person shall coordinate with fire department inspection personnel. The property owner's designated person shall be responsible for notifying OSAC at least two weeks before the planned clearance work. The OSAC may appoint one of its members to provide such onsite inspection of the work as it deems necessary, or notify the property owner to employ at his/her own expense, another biologist or naturalist acceptable to OSAC.

B. The property owner's and OSAC's representatives each will have authority to stop cutting or removal work in progress, if they believe environmentally sensitive species are being damaged or endangered. To do so, they will notify the onsite fire department officer of the area of concern. The fire department will place yellow security tape around the designated plant species or the area specified by the property owner or OSAC representative. The fire department's officer in charge will give orders not to disturb the identified area.

C. Clearance work will not proceed until the Fire Chief, or the Fire Chief's designated representative has reviewed alternative clearance requirements with the property owner and OSAC representative, and the parties have reached agreement on the specific plan of action.

D. In order to curtail erosion on fire roads within the Fire Defense Plan areas, the property owner shall establish and maintain water bars at regular intervals on the roads prior to the start of winter rains. If erosion occurs, gullies in the roads shall be filled with suitable imported material to repair the roads.

   Grading of road surfaces will be limited to a level that does not reduce the overall elevation of the fire road, or in such a way as to cause the surface of the fire road to convey significantly more water than it would have prior to grading.

VI. LOS ALTOS DRIVE FIREBREAK ON HUCKLEBERRY HILL

The Los Altos and Costanilla Way fire defense shall include the construction of a firebreak and shaded fuel break below Los Altos Drive between the Highway 68 overpass and Sunridge Road.

A. **Firebreak:** Construct a firebreak immediately below the paved road extending 30 – 50 feet in width, slope distance, from the edge of the pavement. The varying width is to reduce the straight-line effect of the fuel break. The firebreak width is to be the greatest on steeper slopes. An occasional tree shall be retained in the firebreak area to reduce the visual and aesthetic impacts. In all other respects, the firebreak shall be constructed to Fire Defense Plan standards, with the additional requirement that all trees less than eight (8) inches in diameter at breast height shall be removed, except as described above in this section. The firebreak area may be planted with native vegetation, such as Shaggy-Bark Manzanita (Arctostaphylos Tomentosa), to reduce erosion as long as vegetation is maintained less than eighteen (18) inches in height.

B. **Shaded Fuelbreak:** Construct a shaded fuelbreak below the firebreak extending no more than one-hundred fifty (150) feet, slope distance, from the edge of the pavement. This shaded fuelbreak is to accelerate the natural selection and pruning process of the forest stand and to promote long-term stand health and vigor. The initial thinning shall have an average tree spacing of ten (10) feet. Trees should be thinned as individuals; however the leaving of clumps or groups of trees will be encouraged to promote an aesthetically pleasing stand. In conjunction with the thinning, trees over ten (10) feet in height should be pruned so that the foliage on the lower one-third (1/3) of the bole is removed. In no case should more than sixty (60) percent of the existing crown canopy be removed. The shaded fuelbreak shall be evaluated every five years to determine the appropriate spacing requirements for future thinning, insuring that overcrowding does not occur.

   Ground fuels shall be removed in the shaded fuelbreak using the existing fuelbreak standard. The remaining ground fuels shall be maintained at a height of less than eighteen (18) inches.

   All properties on Los Altos Drive and Costado Road shall be inspected annually for proper fire safe clearances.

VII. WILDLAND PROTECTION ZONE IN PESCADERO CANYON

The Pescadero Canyon portion of the Fire Defense Plan is shown on the accompanying map in Appendix A.

A. <u>Perimeter Fire Protection Zones</u>: Fuel modification and removal shall be required along the roadways and on all residential parcels located between 4047 and 4198 Sunridge Road as well as all residential parcels on Sunset Lane. Fuel modification and removal activities shall not be permitted that will cause erosion on any property.

1. **Roadways:** Along roadways bordering open space areas, fuels shall be modified as follows: Within 20 feet of roadway edges, the “firebreak” standard of the FDP shall apply except that low densities of soft shrubs or isolated hard shrubs with adequate clearance from overtopping trees may be left. On slopes over 30% the fuel modification standards specified in the “Shaded Fuelbreak” section below shall apply.

2. **Residences:** Where habitable structures border the undeveloped forest, fuel reduction zones shall be established extending 100 to 150 feet in ground measurement immediately below such structures. The varying fuel reduction widths are intended to reduce the straight-line effect of the fuel reduction zone areas and to account for the variable threat effects created by topography. Fuel reduction is to be the greatest on steeper slopes and/or below structures with greatest exposure to the effects of radiant heat due to topography and structural components.

    a. Fuel modification on developed property shall be consistent with the requirements of State Forest and Fire Laws (Public Resources Code 4291) and PBCSD Ordinance 19 (See attached Appendix B).

    b. The Fire Chief may find that in order to abate potentially serious fire hazards additional fuel modification is required on open space properties adjacent to habitable properties. In such cases, the Chief shall notify the owner of the property, upon which a potentially serious fire hazard is located, of the location and extent of the additional area to be treated in accordance with fuel modification standards specified in the Shaded Fuelbreak section below. Alternatively, the Fire Chief may specify other measures that will achieve comparable results, following consultations with and agreement by the property owner.

B. Shaded Fuelbreak: A shaded fuelbreak shall be established below Fire Road 23 using the following fuel modification standards within the Pescadero Canyon Open Space Area:

    a. All cut material shall be lopped to within 12" or less of ground level, or chipped and spread, or removed from the area.

b. Remove all tree limbs within six feet of ground level; where located on slopes in excess of 30%, remove all tree limbs within ten feet of ground level. Limb removal shall not exceed 1/3 the height of any tree.

c. Remove all dead tree limbs within 10 feet of ground level. Prune out dead wood from retained shrubs and trees.

d. Shrubs should have average horizontal separation of twice their height. Groups of shrubs can be retained but should have extra clearance.

e. Tree canopies should be separated by at least 10 feet measured edge to edge if possible. Shrubs should not be retained directly under tree canopies unless there is vertical separation of at least three times the height of the shrub between the top of the shrub and the lowest tree limb.

f. Ground fuels shall be removed in the shaded fuelbreak using the existing fuelbreak standard. The remaining ground fuels shall be maintained at a height of less than eighteen (18) inches.

g. Non-irrigated grass or other herbaceous vegetation that dries and cures should be mowed or cut to a maximum height of 4"'

h. All properties identified in the perimeter fire protection zone shall be inspected annually for proper fire safe clearances.

C. <u>Fire Road Improvements</u>: The following improvements shall be completed to complete the proposed emergency road network:

a. Access connecting Fire Road 23 to 17 Mile Drive shall be constructed opposite the entrance to the Carmel Hill Fire Station over a route that more or less follows the partially existing old roadbed and that minimizes excavation. An emergency access gate shall be installed with minimum 30 foot setback from the edge of 17 Mile Drive and be at least 12 feet wide fully open.

b. The eastern portion of Fire Road 23 is located on an existing sewer easement. Concrete and metal sewer clean-outs shall be adjusted to match grade. Roadbed grade must also be selectively raised and widened to achieve a minimum width and elevation sufficient to allow passage by emergency fire equipment during the declared fire season and to prevent loss of fill and deter erosion into the culverted swale crossing. At the eastern end of existing Fire Road 23 on the sewer easement, emergency access shall be provided that connects to Fire Road 22 over the existing ungraded four-wheel drive route. This connecting access shall remain ungraded and maintained only by the mowing of dry grass as necessary, except for:

(1) Minimal grading and fill retention to effect a safe turn from the eastern end of the current Fire Road 23 and sewer easement onto the ungraded slope, and

(2) Installation of a culvert in the drainage channel that carries runoff from Sunridge Road and Highway 68.

c. The Midwood Drive gate entrance to Fire Road/Firebreak 20 shall be reconstructed to current state standards using Public Resources Code 4290. This will require a wider and more perpendicular approach to the entrance gate with a minimum gate setback distance of 30 feet from the edge of Midwood Drive.

VIII. OTHER UNDEVELOPED VACANT PARCELS

The following fire safety requirements shall apply to vacant residential parcels, or other undeveloped parcels as determined by the Fire Chief:

A. Parcels one acre and larger shall provide a minimum clearance of 30 feet around the exterior boundary of the property as follows:

a. Cut all dry grass to a maximum height of 4 inches.
b. Remove all dead standing trees.
c. Remove all dead fallen material.
d. Remove that portion of any dead tree limb within 10 feet of the ground.
e. Remove all tree limbs within six feet of the ground. Limb removal shall not exceed 1/3 the height of any tree.

f. Remove all cut material from the parcel, or chip and spread on-site.

B. Parcels less than one acre shall provide clearance on 100% of the parcel as follows:

a. Cut all dry grass to a maximum height of 4 inches.
b. Remove all dead standing trees.
c. Remove all dead fallen material.
d. Remove that portion of any dead tree limb within 10 feet of the ground.
e. Remove all tree limbs within six feet of the ground. Limb removal shall not exceed 1/3 the height of any tree.
f. Remove all cut material from the parcel, or chip and spread on-site.